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Conference Abstract

ABCD 3.0 Ready to Use

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Abstract

The TDWG standard ABCD (Access to Biological Collections Data task group 2007) was aimed at harmonizing terminologies used for modelling biological collection information and is used as a comprehensive data format for transferring collection and observation data between software components.

The project ABCD 3.0 (A community platform for the development and documentation of the ABCD standard for natural history collections) was financed by the German Research Council (DFG). It addressed the transformation of ABCD into a semantic web-compliant ontology by deconstructing the XML-schema into individually addressable RDF (Resource Description Framework) resources published via the TDWG Terms Wiki (https://terms.tdwg.org/wiki/ABCD_2). In a second step, informal properties and concept-relations described by the original ABCD-schema were transformed into a machine-readable ontology and revised (Güntsch et al. 2016). The project was successfully finished in January 2019.

The ABCD 3 setup allows for the creation of standard-conforming application schemas. The XML variant of ABCD 3.0 was restructured, simplified and made more consistent in terms of element names and types as compared to version 2.x. The XML elements are connected to their semantic concepts using the W3C SAWSDL (Semantic Annotation for Web Services Description Language and XML Schema) standard. The creation of specialized applications schemas is encouraged, the first use case was the application

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schema for zoology. It will also be possible to generate application schemas that break the traditional unit-centric structure of ABCD.

Further achievements of the project include creating a Wikibase instance as the editing platform, with related tools for maintenance queries, such as checking for inconsistencies in the ontology and automated export into RDF. This allows for fast iterations of new or updated versions, e.g. when additional mappings to other standards are done. The setup is agnostic to the data standard created, it can therefore also be used to create or model other standards. Mappings to other standards like Darwin Core (https://dwc.tdwg.org/) and Audubon Core (https://tdwg.github.io/ac/) are now machine readable as well. All XPaths (XML Paths) of ABCD 3.0 XML have been mapped to all variants of ABCD 2.06 and 2.1, which will ease transition to the new standard. The ABCD 3 Ontology will also be uploaded to the GFBio Terminology Server (Karam et al. 2016), where individual concepts can be easily searched or queried, allowing for better interactive modelling of ABCD concepts.

ABCD documentation now adheres to TDWG's Standards Documentation Standard (SDS, https://www.tdwg.org/standards/sds/) and is located at https://abcd.tdwg.org/. The new site is hosted on Github: https://github.com/tdwg/abcd/tree/gh-pages.

Keywords

TDWG standard, ABCD, collections, collection data, natural history, botany, zoology

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